Sun Microsystems
(Test Sponsor: Oracle Corporation)

Sun Fire V490

CPU2017 License: 6
Test Sponsor: Oracle Corporation
Tested by: Oracle Corporation

Test Date: Nov-2016
Hardware Availability: Feb-2007
Software Availability: Jul-2016

Threads

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--- SPECspeed®2017_fp_base (1.00) ---
--- SPECspeed®2017_fp_energy_base (1.00) ---

--- SPECspeed®2017_fp_peak = Not Run ---
--- SPECspeed®2017_fp_energy_peak = -- ---

Hardware

CPU Name: UltraSPARC-IV+
Max MHz: 2100
Nominal: 2100
Enabled: 8 cores, 4 chips
Orderable: 2 or 4 chips
Cache L1: 64 KB I + 64 KB D on chip per core
L2: 2 MB I+D on chip per chip
L3: 32 MB I+D off chip per chip
Other: None
Memory: 32 GB (32 x 1 GB SDRAM Registered, ECC, 232-pin, Samsung M323S6459ET2-C1LC2)
Storage: 300 GB ZFS mirror on 2x 15K RPM 300 GB Fibre Channel drives
Other: None

Software

OS: Solaris 10 1/13
Compiler: C/C++/Fortran: Version 12.5 of Oracle Developer Studio
Parallel: Yes
Firmware: Sun OpenBoot PROM (patch 121689-02) version 4.22.24, released Feb-2010
File System: zfs
System State: Default
Base Pointers: 64-bit
Peak Pointers: Not Applicable
Other: None
Power Management: Set to defaults

Power

Max. Power (W): 1154.6
Idle Power (W): 1081.39
Min. Temperature (C): 20.25
Elevation (m): 67
Line Standard: 208 V / 60 Hz / 1 phase / 2 wire

(Continued on next page)
# SPEC CPU®2017 Floating Point Speed Result

## Sun Microsystems
(Test Sponsor: Oracle Corporation)

**Sun Fire V490**

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**SPECspeed®2017_fp_base = 1.00**
**SPECspeed®2017_fp_energy_base = 1.00**

**SPECspeed®2017_fp_peak = Not Run**
**SPECspeed®2017_fp_energy_peak = --**

### Power (Continued)

Provisioning: Line powered

<table>
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<th>Power Settings</th>
<th>Power-Relevant Hardware</th>
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<td>Management FW:</td>
<td>Power Supply: 2 x 1448 W (redundant)</td>
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<tr>
<td>Memory Mode:</td>
<td>Details: Type A187 1448 Watt AC Input Power Supply</td>
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<tr>
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<td>Backplane: N/A</td>
</tr>
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<td>Other Storage: Sun Slimline 8x DVD-ROM (370-4412)</td>
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<td>Storage Model #: 2 x XTC-FC1CF-300G15KZ, connected to on-board FC HBA</td>
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<tr>
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<td>NICs Installed: 2 x on-board @ 1 GbE</td>
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<tr>
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<td>NICs Enabled (FW/OS): 2 / 1</td>
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<td>NICs Connected/Speed: 1 @ 1 Gbps</td>
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<td>Other HW Model #: None</td>
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</table>

### Temperature Meter

Temperature Meter: bur-x4170m2-002:8889
Hardware Vendor: Digi
Model: WATCHPORT/H
Serial Number: 91GC38245
Input Connection: USB
PTDaemon Version: 1.8.1 (f3ad5467; 2016-09-07)
Setup Description: In front of SUT front panel primary air inlet

### Power Analyzer

Power Analyzer: bur-x4170m2-002:8888
Hardware Vendor: Yokogawa
Model: WT210
Serial Number: 91GC38245
Input Connection: Serial over USB
Metrology Institute: NIST
Calibration By: Yokogawa USA
Calibration Label: 110316-91GC38245
Calibration Date: 3-Nov-2016
PTDaemon Version: 1.8.1 (f3ad5467; 2016-09-07)
Setup Description: Directly connected
Current Ranges Used: 10A
Voltage Range Used: 300V

### Base Results Table

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**SPECspeed®2017_fp_base = 1.00**
**SPECspeed®2017_fp_energy_base = 1.00**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.
Sun Microsystems
(Test Sponsor: Oracle Corporation)
Sun Fire V490

CPU2017 License: 6
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SPECspeed®2017_fp_base = 1.00
SPECspeed®2017_fp_energy_base = 1.00
SPECspeed®2017_fp_peak = Not Run
SPECspeed®2017_fp_energy_peak = --

Operating System Notes

/etc/system settings

The ZFS cache may use 1 to 2 GB:
  zfs:zfs_arc_min=0x40000000
  zfs:zfs_arc_max=0x80000000

Once every 10 seconds, the page flusher may write pages older than 600 seconds:
  autoup=600
  tune_t_fsflushr=10

Prefer local pages, and allow extra memory to manage page metadata:
  lpg_alloc_prefer=1
  tsb_rss_factor=128

General Notes

Environment variables set by runcpu before the start of the run:
OMP_STACKSIZE = "120M"

Platform Notes

Sysinfo program /cpu2017/rc3/Docs/sysinfo
Rev: r4961 of 2016-10-02 93f3ce875d5c7794a1fecn4785739b79b
running on bur408-84 Fri Nov 18 11:35:01 2016

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
  http://www.spec.org/cpu2017/Docs/config.html#sysinfo

From /usr/sbin/psrinfo
  UltraSPARC-IV+ (portid 0 impl 0x19 ver 0x22 clock 2100 MHz)
  UltraSPARC-IV+ (portid 1 impl 0x19 ver 0x22 clock 2100 MHz)
  UltraSPARC-IV+ (portid 2 impl 0x19 ver 0x22 clock 2100 MHz)
  UltraSPARC-IV+ (portid 3 impl 0x19 ver 0x22 clock 2100 MHz)
  4 chips
  8 threads
  2100 MHz

From kstat: 8 cores

From prtconf: 32768 Megabytes

(Continued on next page)
Sun Microsystems  
(Test Sponsor: Oracle Corporation)

Sun Fire V490

SPECs2017_fp_base = 1.00
SPECs2017_fp_energy_base = 1.00
SPECs2017_fp_peak = Not Run
SPECs2017_fp_energy_peak = --

CPU2017 License: 6
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Hardware Availability: Feb-2007
Software Availability: Jul-2016

Platform Notes (Continued)

/etc/release:
Oracle Solaris 10 1/13 s10s_u11wos_24a SPARC
uname -a:
SunOS bur408-84 5.10 Generic_147147-26 sun4u sparc SUNW,Sun-Fire-V490
disk: df -h /cpu2017/rc3
Filesystem size used avail capacity Mounted on
rpool/cpu2017/rc3 213G 1.2G 108G 2% /cpu2017/rc3
(End of data from sysinfo program)

Power Settings Notes

Device power management is disabled by default for server systems.
The UltraSPARC IV+ CPU does not support power management.

Compiler Version Notes

C               | 619.lbm_s(base) 638.imagick_s(base) 644.nab_s(base)
cc: Studio 12.5 Sun C 5.14 SunOS_sparc 2016/05/31
cc: Warning: -xchip=native detection failed, falling back to -xchip=generic

C++, C          | 607.cactuBSSN_s(base pass 0)
CC: Studio 12.5 Sun C++ 5.14 SunOS_sparc 2016/05/31
CC: Warning: -xchip=native detection failed, falling back to -xchip=generic

C++, C, Fortran | 607.cactuBSSN_s(base pass 0)
cc: Studio 12.5 Sun C 5.14 SunOS_sparc 2016/05/31
cc: Warning: -xchip=native detection failed, falling back to -xchip=generic

C++, C, Fortran | 607.cactuBSSN_s(base pass 0)
f90: Studio 12.5 Fortran 95 8.8 SunOS_sparc 2016/05/31

(Continued on next page)
Sun Microsystems  
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Sun Fire V490

**Compiler Version Notes (Continued)**

f90: Warning: -xchip=native detection failed, falling back to -xchip=generic

==============================================================================
C++, C, Fortran | 607.cactuBSSN_s(base pass 0)
cc: Studio 12.5 Sun C 5.14 SunOS_sparc 2016/05/31
cc: Warning: -xchip=native detection failed, falling back to -xchip=generic

==============================================================================
F90: Studio 12.5 Fortran 95 8.8 SunOS_sparc 2016/05/31
f90: Warning: -xchip=native detection failed, falling back to -xchip=generic

==============================================================================
Fortran, C    | 621.wrf_s(base pass 0, base pass 0) 627.cam4_s(base pass 0, base pass 0) 628.pop2_s(base pass 0)
cc: Studio 12.5 Sun C 5.14 SunOS_sparc 2016/05/31
cc: Warning: -xchip=native detection failed, falling back to -xchip=generic

==============================================================================
F90: Studio 12.5 Fortran 95 8.8 SunOS_sparc 2016/05/31
f90: Warning: -xchip=native detection failed, falling back to -xchip=generic

==============================================================================
Fortran, C    | 621.wrf_s(base pass 0, base pass 0) 627.cam4_s(base pass 0, base pass 0) 628.pop2_s(base pass 0)
cc: Studio 12.5 Sun C 5.14 SunOS_sparc 2016/05/31
cc: Warning: -xchip=native detection failed, falling back to -xchip=generic

(Continued on next page)
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SPECSpeed®2017_fp_base = 1.00  
SPECSpeed®2017_fp_energy_base = 1.00

SPECSpeed®2017_fp_peak = Not Run  
SPECSpeed®2017_fp_energy_peak = --

Compiler Version Notes (Continued)

cc: Warning: -xchip=native detection failed, falling back to -xchip=generic

Fortran, C  | 621.wrf_s(base pass 0, base pass 0) 627.cam4_s(base pass 0, base pass 0) 628.pop2_s(base pass 0)

f90: Studio 12.5 Fortran 95 8.8 SunOS_sparc 2016/05/31  
f90: Warning: -xchip=native detection failed, falling back to -xchip=generic

Base Compiler Invocation

C benchmarks:
cc

Fortran benchmarks:
f95

Benchmarks using both Fortran and C:
f95 cc

Benchmarks using Fortran, C, and C++:
CC cc f95

Base Portability Flags

603.bwaves_s: -DSPEC_LP64  
607.cactuBSSN_s: -DSPEC_NO_C99_MATH_IN_CXX -DSPEC_LP64  
619.lbm_s: -DSPEC_LP64  
621.wrf_s: -DSPEC_LP64  
627.cam4_s: -DSPEC_LP64  
628.pop2_s: -DSPEC_LP64  
638.imagick_s: -DSPEC_LP64  
644.nab_s: -DSPEC_LP64  
649.fotonik3d_s: -DSPEC_LP64  
654.roms_s: -DSPEC_LP64
### SPEC CPU®2017 Floating Point Speed Result

#### Sun Microsystems
(Test Sponsor: Oracle Corporation)

**Sun Fire V490**

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### Base Optimization Flags

C benchmarks:
- `--fast`  
- `--xpagesize=4M`  
- `--xprefetch_level=3`  
- `--xarch=sparcvis2`  
- `--xcache=64/32/4/1:2048/64/4/2`  
- `-g1`  
- `-m64`  
- `-DSPEC_OPENMP`  
- `--xopenmp`

Fortran benchmarks:
- `--fast`  
- `--xpagesize=4M`  
- `--xprefetch_level=3`  
- `--xarch=sparcvis2`  
- `--xcache=64/32/4/1:2048/64/4/2`  
- `-g1`  
- `-m64`  
- `--DSPEC_OPENMP`  
- `--xopenmp`

Benchmarks using both Fortran and C:
- `--fast(cc)`  
- `--fast(f95)`  
- `--xpagesize=4M`  
- `--xprefetch_level=3`  
- `--xarch=sparcvis2`  
- `--xcache=64/32/4/1:2048/64/4/2`  
- `-g1`  
- `-DSPEC_OPENMP`  
- `-m64`  
- `--xopenmp`

Benchmarks using Fortran, C, and C++:
- `--std=c++03`  
- `--fast(CC)`  
- `--fast(cc)`  
- `--fast(f95)`  
- `--xpagesize=4M`  
- `--xprefetch_level=3`  
- `--xarch=sparcvis2`  
- `--xcache=64/32/4/1:2048/64/4/2`  
- `-g`  
- `-g`  
- `-m64`  
- `--DSPEC_OPENMP`  
- `--xopenmp`

### Base Other Flags

C benchmarks:
- `--xjobs=6`  
- `--errfmt`

Fortran benchmarks:
- `--xjobs=6`

Benchmarks using both Fortran and C:
- `--xjobs=6`  
- `--errfmt`

Benchmarks using Fortran, C, and C++:
- `--xjobs=6`  
- `--errfmt`

The flags files that were used to format this result can be browsed at
### SPEC CPU®2017 Floating Point Speed Result

**Sun Microsystems**  
(Test Sponsor: Oracle Corporation)

**Sun Fire V490**

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You can also download the XML flags sources by saving the following links:


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